260-120 Group 2502

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

93-1732

Serial No: 07/734,188
Filing Date: 07/22/91
Entitled: ELECTRONIC BALLAST WITH LEAKAGE TRANSFORMER
Applicant: Ole K. Nilssen

Art Unit: 2502
Examiner: NEYZARI, A.

Applicant's phone number: 708-658-5615

I, OLE K. NILSSEN, HEREWITH CERTIFY THAT THE DATE OF DEPOSIT WITH THE U.S. POSTAL SERVICE OF THIS PAPER OR FEE IS: 10-30-92

APPEAL BRIEF

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Pursuant to NOTICE OF APPEAL, Applicant herewith provides an Appeal Brief.

A check (#4182) for $260.00 is enclosed.

Status of Claims

The pending claims are 1-19.

Claims 15-19 are allowed.

Claims 1-14 are rejected under 35 USC 103 as being unpatentable over Sridharan.

All of Examiner's rejections are being appealed.

A copy of claims 1-14 is attached hereto by way of a document entitled Appendix CLAIMS on Appeal in Serial No. 07/734,188.

Status of Amendments

There has been no amendment filed subsequent to Examiner's final rejection.

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Summary of the Invention

With reference to Figs. 9, 10 and 12, the claimed invention is concisely described by claim 12, as follows.

12. An electronic ballast operative to supply lamp power to a gas discharge lamp and comprising:

a ballast housing means (SH -- see 1st line in first paragraph at page 17 of the specification) having an outer surface shaped like a cylinder (BW, TW, SW1 and SW2 -- 1st paragraph at pahe 17); the cylinder having a length (i.e., distance between end walls EW1 and EW2), a cylindrical axis (LA -- 1st paragraph at page 17), and a cross-section; the length being substantially longer than the largest dimension of the cross-section;

electronic circuitry (PSC and BC -- lines 1-3 of 2nd paragraph at page 17); and

a leakage transformer (LT -- line 5 of 2nd paragraph at page 17, as well as top paragraph at page 11) having a ferro-magnetic core (FC1, FC2 -- 5th paragraph at page 11); the ferro-magnetic core being characterized as having a main plane (MP -- line 7 of 2nd paragraph at page 17); the main plane being parallel with the direction of the magnetic flux lines in the ferro-magnetic core; the leakage transformer having a primary winding (PW -- 1st line of 1st paragraph at page 11) and a secondary winding (SW -- 3rd paragraph at page 11), and being operative to transfer at least part of the lamp power from the primary winding to the secondary winding;

the electronic circuitry and the leakage transformer being mounted within the housing means; the leakage transformer being positioned such that the main plane of its ferro-magnetic core is substantially perpendicular to the cylindrical axis.

Issues

The single issue presented for review is:

(1) The appropriateness of Examiner's "103" rejection of claims 1-14 over Sridharan on basis that the use of and the orientation of the leakage transformer "is just the matter of design consideration".

Grouping of Claims

The claims at issue represent but a single group.

ARGUMENTS

Examiner rejected claims 1-14 under 35 USC 103 as being unpatentable over Sridharan et al. ("Sridharan").

Applicant traverses these rejections for the following reasons.

(a) Exemplary claim 12 includes:

"a leakage transformer".

This feature is neither disclosed nor suggested by Sridharan.

In support of his position, Examiner states that it:

"would be just the matter of design consideration to have leakage transformers in place of the two transformers of Sridharan et al.".

Applicant disagrees.

It would be highly unusual to use a leakage transformer in place of an ordinary transformer.

As a person possessing ordinary skill in the particular art pertinent hereto would know very well, the characteristics of a leakage transformer are substantially different from those of an ordinary transformer (i.e., a transformer without flux leakage between its primary and secondary windings); and an ordinary transformer may not ordinarily be substituted with a leakage transformer. Since Examiner must be presumed not to possess any particular level of skill in the particular art pertinent hereto, it is -- without clear supporting evidence -- inappropriate for Examiner to assert that it is just a "matter of design consideration" to have leakage transformers in place of the two transformers of Sridharan".

(b) With further reference to exemplary claim 12, the ballast housing means is specified to have a cylindrical axis, and the leakage transformer is specified as having a ferromagnetic core while:

"being positioned such that the main plane of its ferromagnetic core is substantially perpendicular to the cylindrical axis".

This feature is neither disclosed nor suggested by Sridharan.

In a ballast having a housing of the shape specified in the claim, it would be highly unusual to place a leakage transformer perpendicularly to the housing's longitudinal axis.

In support of his position, Examiner states that:

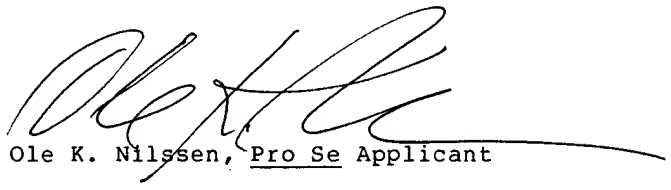
"The position of the transformers with their main plane parallel or perpendicular to the long axis is just the matter of design consideration.".

Applicant disagrees.

Both in case of ordinary 60 Hz ballasts, as well as in case of electronic ballasts, it would be highly unusual to have a leakage transformer mounted with its main plane perpendicular to the long axis of the ballast housing.

As a person possessing ordinary skill in the particular art pertinent hereto would know very well, to fit within the dimensions of a housing means such as specified in the claim, or -- in case of an electronic ballast -- to be conveniently mountable on a printed circuit board while at the same time to fit within the indicated dimensions, a leakage transformer would be mounted in such manner as to have its main plane parallel to the housing's longitudinal axis.

Since Examiner must be presumed not to possess any particular level of skill in the particular art pertinent hereto, it is -- without clear supporting evidence -- inappropriate for Examiner to assert that the orientation of a leakage transformer within a ballast housing is just a "matter of design consideration".



Ole K. Nilssen, Pro Se Applicant

APPENDIX

CLAIMS on Appeal in Serial No. 07/734,188

1. An electronic ballast comprising:

a ballast housing means having a shape substantially like that of a parallelepiped; the housing having: (i) a mostly flat rectangular bottom wall, (ii) a mostly flat rectangular top wall, the top wall being substantially parallel with the bottom wall, (iii) a mostly flat first side wall, (iv) a mostly flat second side wall, the second side wall being substantially parallel with the first side wall, (v) a mostly flat first end wall, (vi) a mostly flat second end wall, and (vii) a longitudinal axis; the rectangular bottom wall and the rectangular top wall each having a pair of long sides and a pair of short sides; the length of each of the long sides being substantially longer than the length of each of the short sides; the long sides of the bottom wall being parallel with the longitudinal axis;

electronic circuitry; and

a transformer having a ferro-magnetic core; the ferro-magnetic core being characterized as having a main plane; the main plane being parallel with the direction of the magnetic flux in the ferro-magnetic core;

the electronic circuitry and the transformer being mounted within the ballast housing; the transformer being positioned such that the main plane of the ferro-magnetic core is substantially perpendicular to the longitudinal axis.

2. The ballast of claim 1 wherein the transformer generates a substantial amount of magnetic leakage flux.

3. The ballast of claim 1 where at least one of the walls is electrically conductive.

4. The ballast of claim 1 wherein at least one of the walls is made of steel.

5. The ballast of claim 1 wherein the electronic circuitry is characterized by including an inverter connected with a source of DC voltage and operative to supply an AC voltage.

6. The ballast of claim 1 wherein the ballast housing is made of ferro-magnetic material.

7. An electronic ballast comprising:

a ballast housing means having an outer surface shaped like a cylinder of a certain length and with a substantially rectangular cross-section; the length being substantially longer than the largest dimension of its rectangular cross-section; the housing means having: (i) a first rectangular relatively wide wall; (ii) a second rectangular relatively wide wall, this second relatively wide wall being approximately of the same size and shape as the size and shape of the first rectangular relatively wide wall, as well as being substantially parallel with the second rectangular relatively wide wall; (iii) a first rectangular relatively narrow wall; (iv) a second rectangular relatively narrow wall, this second relatively narrow wall being approximately of the same size and shape as the size and shape of the first rectangular relatively narrow wall, as well as being substantially parallel to the first rectangular relatively narrow wall; (v) a cylindrical axis disposed parallel with all the walls of the housing means;

electronic circuitry; and

a leakage transformer having a ferro-magnetic core; the ferro-magnetic core being characterized as having a main plane; the main plane being parallel with the direction of the magnetic flux lines in the ferro-magnetic core; the leakage transformer generating a substantial amount of magnetic leakage flux;

the electronic circuitry and the leakage transformer being mounted within the housing means; the leakage transformer being positioned such that the main plane of its ferro-magnetic core is substantially perpendicular to the plane of the first rectangular relatively wide wall.

8. The electronic ballast of claim 7 wherein the main plane of the ferro-magnetic core is disposed perpendicularly to the cylindrical axis.

9. The electronic ballast of claim 7 wherein at least parts of the walls are electrically conductive.

10. The electronic ballast of claim 9 wherein the ballast housing means includes a substantial amount of steel.

11. The electronic ballast of claim 7 wherein at least part of the walls is made of metal.

12. An electronic ballast operative to supply lamp power to a gas discharge lamp and comprising:

a ballast housing means having an outer surface shaped like a cylinder; the cylinder having a length, a cylindrical axis, and a cross-section; the length being substantially longer than the largest dimension of the cross-section;

electronic circuitry; and

a leakage transformer having a ferro-magnetic core; the ferro-magnetic core being characterized as having a main plane; the main plane being parallel with the direction of the magnetic flux lines in the ferro-magnetic core; the leakage transformer having a primary winding and a secondary winding, and being operative to transfer at least part of the lamp power from the primary winding to the secondary winding;

the electronic circuitry and the leakage transformer being mounted within the housing means; the leakage transformer being positioned such that the main plane of its ferro-magnetic core is substantially perpendicular to the cylindrical axis.

13. The electronic ballast of claim 12 wherein the main plane of the leakage transformer is substantially parallel with the direction of most of the magnetic flux lines in the ferro-magnetic core.

14. The electronic ballast of claim 12 wherein the lamp power is supplied to the gas discharge lamp in the form of a high-frequency current; the fundamental frequency of the high-frequency current being substantially higher than that of the power line voltage on an ordinary electric utility power line.